

REMARKS

Applicants thank the Examiner for the courtesy extended to Applicants' attorney during the interview held December 13, 2004, in the above-identified application. During the interview, Applicants' attorney explained the presently-claimed invention and explored with the Examiner various ways of demonstrating patentability, and discussed other issues raised in the Office Action. The discussion is summarized and expanded upon below.

The rejections of Claims 1-3 and 6 under 35 U.S.C. § 102(a and b) over various prior art references, each applied alone, and under 35 U.S.C. § 103(a) as unpatentable over each of these prior art references alone, or in view of U.S. 4,377,415 (Johnson et al), is respectfully traversed.

As recited in new Claim 9, the present invention is a flat panel obtained by the Hatschek process from a sheet material obtained by filtration of an aqueous suspension comprising a cement in an amount of from 20 to 50% by weight of dry matter, calcium carbonate in an amount of from 35 to 65% by weight of dry matter, and at least synthetic fibres, said flat panel being obtained without autoclaving.

With the presently-claimed invention, both good results in terms of dimensional stability and quite satisfactory results in terms of mechanical properties are obtained, independently of the presence or not of a pozzolan, when a relatively limited amount of cement, combined with a relatively high amount of calcium carbonate, is used to form a flat panel obtained by the Hatschek process without autoclaving, as described in the specification at page 6, line 38 through page 7, line 7. A flat panel requires limiting possible shrinkage as much as possible while maintaining satisfactory mechanical properties, whereas non-flat panels, such as corrugated panels, mainly focus on relatively high mechanical properties. The above-discussed advantages of the present invention are not suggested by the applied prior art, as now discussed.

U.S. 4,840,672 (Baes) discloses insulating boards comprising Portland cement, fibers and fillers containing, *inter alia*, 50-75% by weight of cement, 5-20% by weight of mica and 8-25% by weight of hydrated lime. Synthetic fibres do not appear to be disclosed. Thus, Baes neither discloses nor suggests the presently-claimed invention, as recited in above Claim 9.

U.S. 4,428,775 (Johnson et al '775) and U.S. 4,543,159 (Johnson et al '159) each discloses a fiber-cement product capable of being formed on a Hatschek machine consisting essentially of a 40-80% by weight of a Portland cement binder, fibers, and 10-40% by weight of silica and/or filler. While calcium carbonate is disclosed as a possible filler, none of the examples contain calcium carbonate and moreover, all the examples contain cement in an amount generally greater than the maximum recited herein, and filler generally in an amount less than the minimum recited herein. These references neither disclose nor suggest the presently-claimed invention, as recited in above Claim 9.

U.S. 4,377,415 (Johnson et al '415) discloses a cement-wollastonite product consisting essentially of 40-90% by weight of Portland cement and 10-60% by weight of wollastonite. Wollastonite is a calcium silicate. Thus, Johnson et al '415 neither discloses nor suggests the presently-claimed invention.

U.S. 6,139,620 (Suzuki et al)¹ discloses autoclaved products of calcium silicate board. The present invention is a non-autoclaved product. Thus, at least for this reason, Suzuki et al neither discloses nor suggests the presently-claimed invention.

U.S. 6,676,744 (Merkley et al '744), U.S. 6,676,745 (Merkley et al '745) and U.S. 6,777,103 (Merkley et al '103) are drawn to cellulose fiber reinforced cement composite materials. For fiber reinforced cement articles that are to be air-cured, cement will generally be present in an amount of 60-90% by weight, without incorporating any silica or aggregate

¹ The Examiner identified Suzuki et al as U.S. 6,139,620, but this reference was not made of record. The Examiner is respectfully requested to make it of record in the next Office communication.

(column 11, lines 3-17 of Merkley et al '744). The Merkley et al patents also appear to be drawn to corrugated materials such as roofing, rather than flat panels. The Merkley et al patents neither disclose nor suggest the presently-claimed invention.

U.S. 6,749,897 (Naji et al) discloses a method for coating a building product, wherein the coating formulation includes a hydraulic binder and a dewatering agent. Synthetic fibres do not appear to be disclosed. For at least this reason, Naji et al neither discloses nor suggests the presently-claimed flat panel.

U.S. 6,346,146 (Duselis et al '146) and U.S. 6,506,248 (Duselis et al '248) each disclose a method of forming a cementitious product comprising adding a cementitious material, a silicious material, and a low bulk density material to water to form a slurry, forming a green shaped article from the slurry and curing the article in an autoclave, wherein the low bulk density material is substantially calcium silicate hydrate, and includes unreacted silicious reactant. The present invention is a non-autoclaved product. Thus, at least for this reason, the Duselis et al patents neither disclose nor suggest the presently-claimed flat panel.

U.S. 6,572,697 (Gleeson et al) discloses the addition of low density additives into cementitious cellulose fiber-reinforced building materials. While Gleeson et al lists calcium carbonate as one of numerous possible additives, Gleeson et al does not exemplify calcium carbonate or disclose a flat panel having the presently-recited composition.

U.S. 4,101,335 (Barrable '335) and U.S. 4,132,555 (Barrable '555) disclose building boards comprising a water-settable inorganic binder which is one or more of a calcium silicate binder, Portland cement, aluminous cement, and blast furnace slag cement, and fibrous reinforcing material made by autoclaving. The present invention is a non-autoclaved product. Thus, at least for this reason, the Barrable patents neither disclose nor suggest the presently-claimed flat panel.

U.S. 6,203,609 (Castro et al) discloses fiber reinforced cellular concrete comprising a base of a pozzolanic product with aluminum powder, calcium carbonate, calcium formate, cement and polypropylene fiber, along with water. However, Castro et al does not disclose a flat panel, or the presently-recited amount ranges, or the use of the Hatschek process.

U.S. 4,306,911 (Gordon et al) discloses an asbestos-free fiber reinforced hydraulically setting material comprising a slurry of one or more hydraulic binding agents, fibers, water, and optional additional additives. However, Gordon et al neither disclose nor suggest a flat panel having the presently-recited composition.

DD 253421 (Ausborn et al) discloses an asbestos-free shaped product comprising hydraulic binders, organic fibers, and optionally inorganic fibers, and fillers such as micaceous waste. The cement is present in an amount greater, and the filler is present in an amount lower, than the presently-recited cement and calcium carbonate, respectively.

EP 263723 (Gregersen et al) disclose fiber-reinforced shaped articles comprising a hydraulic binder and preferably a pozzolanically active additive, and cellulosic fibers. However, no synthetic fibers appear to have been disclosed. Gregersen et al neither disclose nor suggest the presently-recited flat panel.

JP 62223046 (Seto et al) discloses a molded cement product manufactured from a dry cement mixture of Portland cement, calcium carbonate, silica, and polypropylene fibers. Seto et al neither discloses nor suggests the presently-recited relative amounts of components, or a flat panel obtained by the Hatschek process from a sheet material obtained by filtration of an aqueous suspension, which is different from a molded product.

In addition to the discussion of the prior art above, the Examiner also relies on Johnson et al '415 as rendering obvious the use of calcium carbonate in place of any of the fillers of the other prior art.

Even if calcium carbonate were substituted for any of the fillers of the above-discussed prior art, the result would still not be the presently-claimed invention.

For all the above reasons, it is respectfully requested that the rejections over prior art be withdrawn.

The rejection of Claims 1-3 and 6 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. Indeed, the rejection is now moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that it be withdrawn.

Applicants respectfully call the Examiner's attention to the fact that the Form PTO 1449 for the Information Disclosure Statement filed July 19, 2004 that was attached to the Office Action was not initialed by the Examiner. Accordingly, **submitted herewith** is another copy of said form. The Examiner is respectfully requested to initial it, and include a copy thereof with the next Office communication.

In addition, Applicants respectfully call the Examiner's attention to the Information Disclosure Statement (IDS) filed April 13, 2004. The Examiner is respectfully requested to initial the Form PTO 1449 submitted therewith, and include a copy thereof with the next Office communication. **Submitted herewith** is another copy of said form.

Moreover, since the date of this IDS is before the date of the Office Action and thus technically was part of the Official file as of the Office Action date, Applicants respectfully request that should the Examiner determine that a new ground of rejection needs to be made in the next Office Action relying in whole or in part on any of the references cited in the IDS, then said next Office Action not be made Final, even if the new rejection was necessitated by the present amendment to the claims.

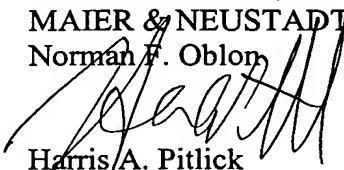
Application No. 10/691,638
Reply to Office Action of November 30, 2004

All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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